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(71) Applicant(s)

**Laurence Keith Kovacs**  
107 Baswich Lane, STAFFORD, ST17 0BN,  
United Kingdom

(72) Inventor(s)

**Laurence Keith Kovacs**

(74) Agent and/or Address for Service

**Swindell & Pearson**  
48 Friar Gate, DERBY, DE1 1GY, United Kingdom

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(56) Documents Cited

GB 2312842 A

GB 2161918 A

GB 2159051 A

GB 2107182 A

(58) Field of Search

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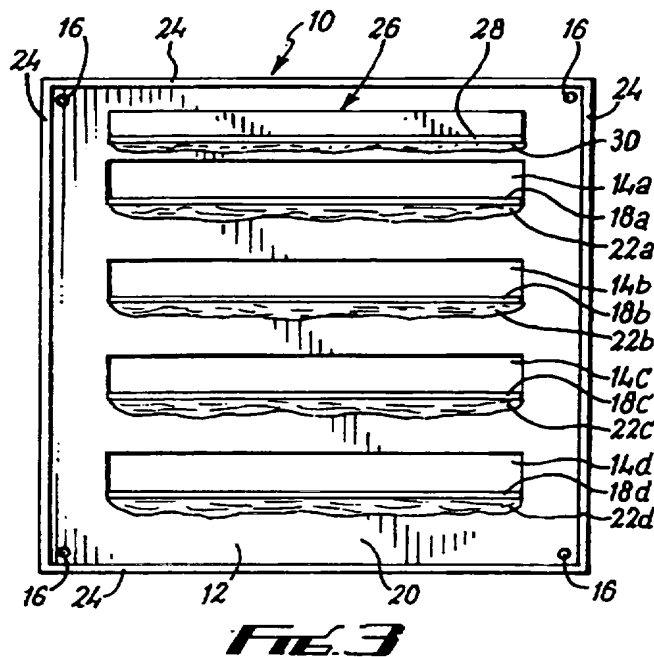
INT CL<sup>6</sup> A62C 2/06 2/12 2/14 2/16 2/18

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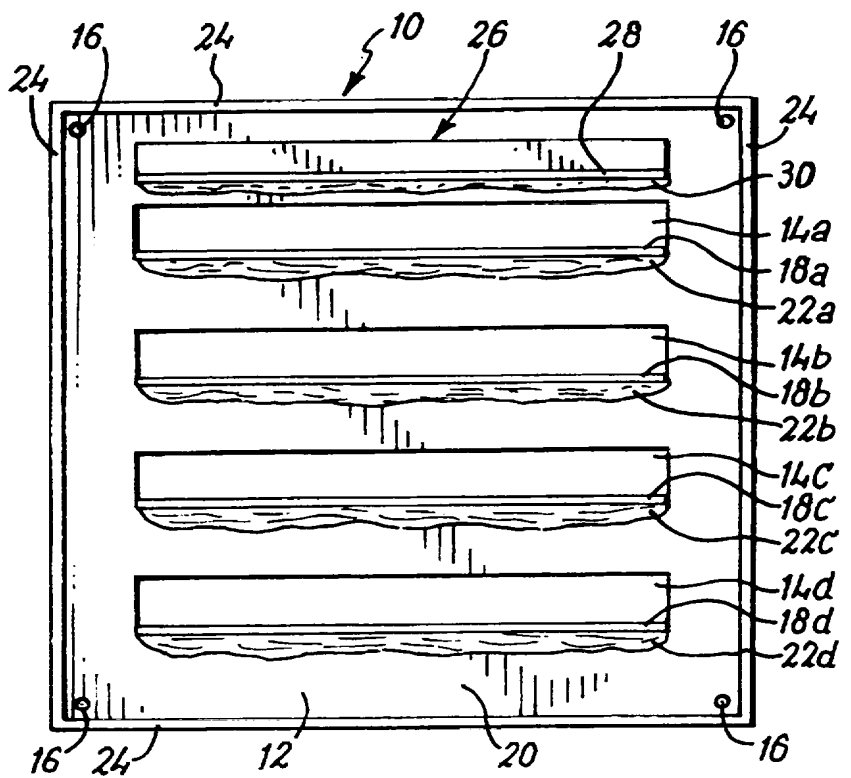
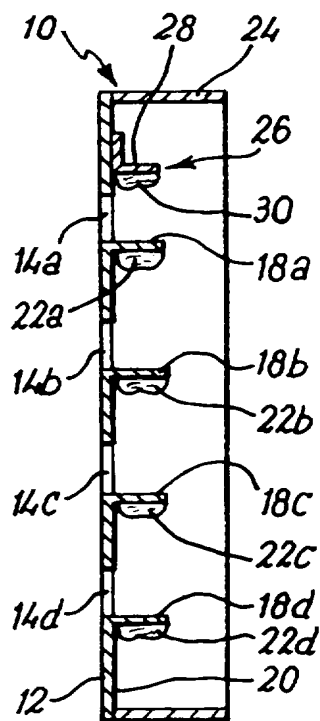
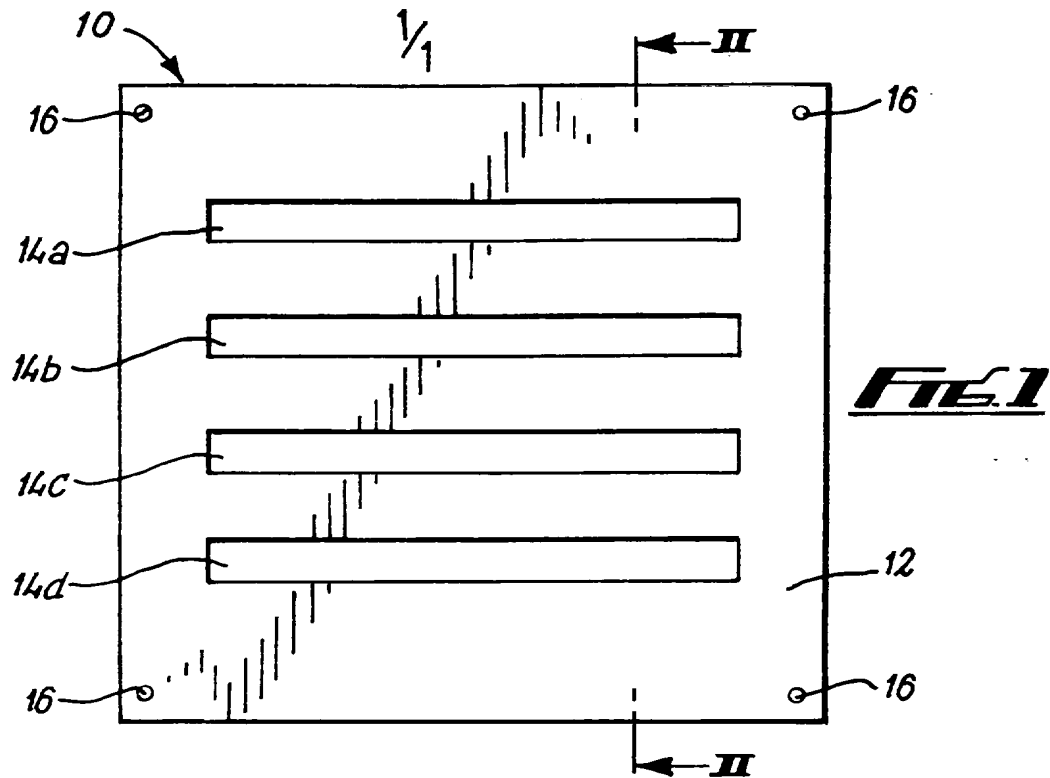
(54) Abstract Title

**Ventilator grille**

(57) An intumescent ventilator grille useful as a fire barrier comprises a one piece main body 12 through which are formed slots by pressing correspondingly shaped support members 18 rearwardly from the main body, the support members carrying intumescent strips 22 utility is in walls or doors.



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Ventilator Grille

This invention relates to ventilator grilles.

Intumescent ventilators are used in walls, doors etc to act as a barrier to fire. Present intumescent ventilators incorporate a layer of material which normally allows air through but expands under the action of heat to provide a fire-proof barrier. Known ventilators and their grilles can be disadvantageous.

According to this invention, there is a ventilator grille comprising a one piece main body having front and rear faces and defining a plurality of ventilation apertures therethrough, the grille further including a plurality of intumescent members provided on the rear face of the main body in association with the apertures.

It is an advantage of the preferred embodiment that the grille can be fixed to a wall by simply fixing a single piece thereto.

Preferably, the grille further includes a plurality of support members extending rearwardly from the main body. Conveniently, the intumescent members are supported by the support members. The support members may extend substantially at right angles to such rear face, or may extend therefrom at any other suitable angle.

Each support member may be associated with a respective one of the apertures, and each intumescent strip may be associated with a respective one of the apertures.

Preferably, the support members are in the form of elongate vanes. Each support member is preferably provided adjacent a respective one of the apertures. Conveniently, each support member is provided below its respective aperture.

In one embodiment, each aperture is formed by pressing out the material of the main body rearwardly. Conveniently, each support member constitutes the material pressed out from the main body. Preferably, the material pressed out is pushed rearwardly from the main body. Desirably, the main body is in the form of a substantially flat plate.

Each aperture may be configured as a slot, and each support member is preferably provided along the bottom edge of each slot.

Preferably, each intumescent member is provided along one face of each support member, and desirably along the face facing away from the aperture from which each support member is pressed out.

A rim member may be provided on the main body to extend to rearwardly therefrom around the periphery of the main body. The rim member may be in the form of a flange extending substantially wholly around the main body.

The grille may include a further support member which may be attached to the main body, or to the flange, or to both, and may support a further intumescent member. The further support member may be attached above the uppermost aperture.

An embodiment of the invention will now be described by way of example, with reference to the accompanying drawings, in which:-

Fig. 1 is a front view of a grille;

Fig. 2 is a view along the lines II-II in Fig. 1; and

Fig. 3 is a rear view of the grille shown in Fig. 1.

Referring to the drawings, there is shown a ventilator grille 10

comprising a main body 12 of one piece construction. The main body 12 defines a plurality of apertures, in the form of slots 14. In the embodiments shown, there are four slots 14a, 14b, 14c, 14d. The main body 12 is formed of a substantially flat plate which is rectangular in configuration, although it will be appreciated that it could be of any other suitable configuration.

The arrangement of the slots in the embodiment shown is four slots 14 one above the other, each slot extending across a major proportion of the main body 12. It will, however, be appreciated, that the slots could be any other suitable configuration, for example, there could be two, three, four or even more, to replace each respective individual slot as shown in Fig. 1, as will be appreciated by a person skilled in the art.

Four holes 16 are provided at the corners of the main body 12 to be used for mechanically fixing the grille 10 to a ventilator outlet. Appropriate fixing means, for example screws, will extend through the holes 16 to attach the grille to a wall, in a way known to persons skilled in the art.

Referring to Fig. 2, there is shown the grille 10 in sectional side view in which it can be seen that support members, in the form of vanes 18 extend from the rear face 20 of the main body 12 in a rearward direction. There are four vanes, 18a, 18b, 18c and 18d.

The vanes 18 are formed during the formation of the slots 14. Each slot 14 is formed by pressing out the material of the main body 12 in a rearward direction to provide each respective vane 18. Although the vanes 18 are shown extending virtually perpendicularly from the main body 12, it will be appreciated that they may extend at any appropriate angle.

Intumescent members in the form of intumescent strips 22 are provided on the underside of each of the vanes 18. There are four intumescent strips 22a, 22b, 22c, 22d, attached respectively to the vanes 18a, 18b, 18c, and 18d.

A flange 24 extends around the rim of the main body 12 on substantially all sides. A further support member, in the form of an elongate L-shaped member 26 is attached to the flange 24, to extend parallel to the vanes 18. One arm 28 of the L-shaped member 26 is arranged to have one face thereof facing rearwardly, and upon this face, a further intumescent strip 30 is attached.

The L-shaped member 26 is attached to the rear face 20 of the main body 12, for example by welding.

Various modifications can be made without departing from the scope of the invention. For example, the main body 12 may be formed as a single part, as shown in the drawings, or may be formed as two or more separate parts which are then fixed together, for example by welding, to form the one piece main body.

CLAIMS

1. A ventilator grille comprising a one piece main body having front and rear faces and defining a plurality of ventilation apertures therethrough, the grille further including a plurality of intumescent members provided on the rear face of the main body in association with the apertures.
2. A ventilator grille as claimed in claim 1, in which the grille further includes a plurality of support members extending rearwardly from the main body.
3. A ventilator grille as claimed in claim 2, in which the intumescent members are supported by the support members.
4. A ventilator grille as claimed in claim 2 or claim 3, in which the support members extend substantially at right angles to such rear face.
5. A ventilator grille as claimed in claim 2 or claim 3, in which the support members extend from the rear face at any suitable angle.
6. A ventilator grille as claimed in any of claims 2 to 5, in which each support member is associated with a respective one of the apertures, and each intumescent strip is associated with a respective one of the apertures.
7. A ventilator grille as claimed in any of claims 2 to 6, in which the support members are in the form of elongate vanes.
8. A ventilator grille as claimed in any of claims 2 to 7, in which each support member is provided adjacent a respective one of the apertures.
9. A ventilator grille as claimed in claim 8, in which each support member is provided below its respective aperture.

10. A ventilator grille as claimed in any of the preceding claims, in which each aperture is formed by pressing out the material of the main body rearwardly.
11. A ventilator grille as claimed in claim 10 when dependent upon any one of claims 2 to 9, in which each support member constitutes the material pressed out from the main body.
12. A ventilator grille as claimed in claim 11, in which the material pressed out is pushed rearwardly from the main body.
13. A ventilator grille as claimed in any of the preceding claims, in which the main body is in the form of a substantially flat plate.
14. A ventilator grille as claimed in any of the preceding claims, in which each aperture is configured as a slot, and each support member is provided along the bottom edge of each slot.
15. A ventilator grille as claimed in claim 14, in which each intumescent member is provided along one face of each support member, and along the face facing away from the aperture from which each support member is pressed out.
16. A ventilator grille as claimed in any of the preceding claims, in which a rim member is provided on the main body to extend to rearwardly therefrom around the periphery of the main body.
17. A ventilator grille as claimed in claim 16, in which the rim member is in the form of a flange extending substantially wholly around the main body.
18. A ventilator grille as claimed in any of the preceding claims, including a further support member which is attached to the main body, or to the flange, or to both.



19. A ventilator grille as claimed in claim 18, in which the further support member supports a further intumescent member.
20. A ventilator grille as claimed in claim 18 or claim 19, in which the further support member is attached above the uppermost aperture.
21. A ventilator grille, substantially as hereinbefore described with reference to the accompanying drawings.
22. Any novel subject matter or combination including novel subject matter disclosed herein, whether or not within the scope of or relating to the same invention as any of the preceding claims.



Application No: GB 9903961.2  
Claims searched: All

Examiner: Michael R. Wendt  
Date of search: 26 April 1999

## Patents Act 1977 Search Report under Section 17

### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): A5A (A22, A23)

Int Cl (Ed.6): A62C 2/06, 2/12, 2/14, 2/16, 2/18

Other: Online: EPODOC, Japio, WPI

### Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2312842 A (E. - SEALS) (& WO 97/43011 A1) e.g. see Figures 1 & 2. Paragraph bridging pages 2 & 3. Page 5 lines 10 - 18. Claim 1.	1, 2, 3, 6 & 8 at least.
X	GB 2161918 A (DIXON) e.g. see Figures 1 & 2. Page 2 lines 112 - 122.	1 - 3
X	GB 2159051 A (DIXON) e.g. see Claims. Figures 1 - 8. Page 2 lines 118 etc.	1 - 7 at least
X	GB 2107182 A (DIXON) e.g. see Claims. Figures 1 - 8. Page 1 lines 122 etc.	-----

X Document indicating lack of novelty or inventive step  
Y Document indicating lack of inventive step if combined with one or more other documents of same category.

& Member of the same patent family

A Document indicating technological background and/or state of the art.  
P Document published on or after the declared priority date but before the filing date of this invention.

E Patent document published on or after, but with priority date earlier than, the filing date of this application.